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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:	Tinku Acharya et al.	§	Art Unit:	2615
Serial No.:	09/359,523	§	Examiner:	Dorothy Wu
Filed:	July 23, 1999	§		
Title:	Image Processing Method and Apparatus	§	Docket No.	ITL.0237US (P7323)

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Dear Sir:

Applicant submits the following reply to the Examiner's Answer.

Date of Deposit: June 21, 2004
I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as **first class mail** with sufficient postage on the date indicated above and is addressed to Mail Stop **Appeal Brief-Patents**, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Janice Munoz

I. REPLY TO EXAMINER'S ARGUMENTS

In the Reply Brief, the Examiner ignores the specific claim limitations and thus, fails to address the arguments that are set forth in the Appeal Brief. For example, the hypothetical combination of Tamura and Takakura fails to teach or suggest the modification of values in a look-up table based on a computed white color balance and the values. Instead of addressing these specific limitations, the Examiner oversimplifies the issue to address the limitations "modifying the values in the look-up table." Examiner's Answer, 5. However, the claims are not merely directed to the modification of values in a look-up table, but rather, the claims are directed to a modification based on 1.) a computed white color balance (of an image transformed using values in the table); and 2.) the values in the look-up table. A possible advantage of this modification is that the computed white color balance becomes progressively better due to the use of the existing values.

The Examiner fails to address where the prior teaches or suggests the modification of table values based on the second component that is identified above. More specifically, even assuming, for purposes of argument, that Takakura and Tamura are combined, the values that are stored in Tamura's gain control circuits 11R and 11B (now look-up tables due to the hypothetical combination) would simply be rewritten based on a computed white color balance (as set forth in Takakura). However, neither Takakura nor Tamura teaches or suggests somehow modifying values in a look-up table *based on the values* (*emphasis added*). Thus, the advantages that flow from the claimed invention cannot be achieved from the hypothetical combination of Takakura and Tamura. Therefore, the Examiner's answer to Applicant's arguments is specious, as the Examiner oversimplifies the issues without taking into account the specific claim limitations that address the modification being performed.

Although the Examiner contends that the hypothetical combination of Tamura and Takakura would yield a system in which based on a computer white color balance (Examiner's Answer, 5), a new table address would be generated to access a new table offset, the Examiner fails to show where the prior art provides this teaching or suggestion. Instead, Takakura clearly teaches rewriting color balance correction values based on a computed white color balance. Takakura, 9:40-50. Thus, a more logical combination of Takakura and Tamura (assuming such a combination is proper, for purposes of argument) would replace Tamura's gain control circuits 11R and 11B with look-up tables whose values are re-written, as disclosed in Takakura.

Thus, Applicant maintains that the § 103 rejections of claims 1-18 are in error and should be reversed.

Respectfully submitted,

Date: June 21, 2004

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APPENDIX OF CLAIMS

The claims on appeal are:

1. A method comprising:

capturing an optical image to form raw data indicative of the optical image;

using values in a look-up table to transform the raw data into transformed data indicative of a second image;

computing a white color balance of the second image; and

modifying the values in the look-up table based on the computed white color balance and the values.

2. The method of claim 1, further comprising repeating the using, computing and modifying until the computed white color balance is at an acceptable level.

3. The method of claim 1, further comprising repeating the using, computing and modifying for a predetermined number of iterations.

4. The method of claim 3, wherein the number of iterations depends on whether the capturing is used to capture a still image or video.

5. The method of claim 1, further comprising:

modifying the transformed data to compensate for differences in responses to the optical image between the image sensor and a human eye.

6. The method of claim 5, further comprising:

modifying the result of the modification of the transformed data to convert the result into a predetermined color space.

7. The method of claim 1, further comprising:

before the transformation, modifying the raw data to interpolate pixel colors.

8. An image processing circuit comprising:

an image sensor to capture an optical image to form raw data indicative of the optical image;

a look-up table storing values to transform the raw data into transformed data indicative of a second image;

a white color balance circuit to compute a white color balance of the second image; and

a second circuit to modify the values in the look-up table based on the computed white color balance and the values.

9. The image processing circuit of claim 8, wherein, for a single capture by the image sensor, the second circuit repeatably modifies the values in the look-up table and uses the white color balance circuit to compute the white color balance until the computed white color balance is at an acceptable level.

10. The image processing circuit of claim 8, wherein, for a single capture by the image sensor, the second circuit repeatably modifies the values in the look-up table and uses the white color balance circuit to compute the white color balance for a predetermined number of iterations.

11. The image processing circuit of claim 8, wherein the number of iterations depends on whether the capturing is used to capture a still image or video.

12. The image processing circuit of claim 8, further comprising:

a color correction circuit to modify the transformed data to compensate for differences in responses to the optical image between the image sensor and a human eye.

13. The image processing circuit of claim 8, further comprising:

a color space conversion circuit to convert the transformed data into a predetermined color space.

14. The image processing circuit of claim 8, further comprising:

an interpolation circuit to modify the raw data to interpolate pixel colors.

15. The image processing circuit of claim 8, wherein the image processing circuit comprises a camera.

16. An article comprising a storage medium readable by a processor-based system, the medium storing instructions to cause a processor to:

use values stored in a look-up table to transform raw data provided by an image sensor into transformed data that indicates an image,

compute a white color balance of the image, and

modify the values in the look-up table based on the computed white color balance and the values.

17. The article of claim 16, the instructions causing the processor to repeatably modify the values in the look-up table and compute the white color balance until the computed white color balance is at an acceptable level.

18. The article of claim 16, the instructions causing the processor to repeatably modify the values in the look-up table and computer the white color balance for a predetermined number of iterations.